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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/498,398	02/04/2000	Soren V. Andrsen	20184-000100US	8774

7590 08/15/2003

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EXAMINER
ARMSTRONG, ANGELA A

ART UNIT	PAPER NUMBER
2654	11

DATE MAILED: 08/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/498,398	ANDRSEN ET AL.	
	Examiner	Art Unit	
	Angela A. Armstrong	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 May 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-21 and 26-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-21 and 26-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Continued Prosecution Application

1. The request filed on May 29, 2003 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/498,398 is acceptable and a CPA has been established. An action on the CPA follows.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 20, and 26-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shlomot et al (US Patent No. 5,699,481) in view of Covell et al (US Patent No. 5,828,994).

3. Regarding claim 26, Shlomot teaches a timing recovery scheme for packet speech in multiplexing environment of voice data with applications. Shlomot provides for

Manipulating a received sound signal to produce a sound signal, wherein the received sound signal is received from a packet switched network that looses some packets, at Figure 4, col. 3, line 45 to col. 4, line 41;

Receiving a first received frame that is part of the received sound signal, at Figure 4, col. 3, line 45 to col. 4, line 41 and col. 5, line 45 to col. 6, line 56;

Producing a first signal frame corresponding to the first received frame, at Figure 4, col. 3, line 45 to col. 4, line 41 and col. 5, line 45 to col. 6, line 56;

Wherein the first signal frame is part of the sound signal, at Figure 4, col. 3, line 45 to col. 4, line 41 and col. 5, line 45 to col. 6, line 56;

The second received frame is normally produced contiguously with the first received frame, at Figure 4, col. 3, line 45 to col. 4, line 41 and col. 5, line 45 to col. 6, line 56;

Determining after beginning the first producing step that at least part of the second received frame is currently unavailable for production, at Figure 4, col. 3, line 45 to col. 4, line 41 and col. 5, line 45 to col. 6, line 56;

Shlomot does not specifically teach producing an expanded portion, wherein the first signal frame and the expanded portion are contiguous parts of the sound signal, and the expanded portion that corresponds to a different amount of the received sound signal than either the first or second received frames.

Covell teaches a system for non-uniform time scale modification of recorded audio, which implements time scale modification for compressing or expansion of audio (Col. 3, lines 45-47); time scale modification of individual sections or frames of speech and processing of contiguous frames of speech of non-uniform time scales (col. 4, lines 55-67; col. 6, lines 27-50; col. 9, lines 29-57). Covell teaches more natural sounding speech can be obtained by applying non-uniform compression/expansion to the speech signal.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Shlomot to implement non-uniform time scale modification of the received audio signals, as taught by Covell, for the purpose of obtaining more natural sounding speech during signal reconstruction.

Regarding claim 27, 31, 33, 35-37, and 40, Shlomot and Covell teach everything as claimed in claim 26. Shlomot does not specifically teach the expanded portion is selected from the first signal frame based, at least in part, upon measures of periodicity or that the portions are merged based, at least in part, on overlap-add. Covell teaches the implementation of various known time scale modification methods and indicates that a suitable method is pitch-synchronous overlap-add, PSOLA. Covell teaches that PSOLA is carried out such that the signal time scale modification preserves the pitch contour.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Shlomot to implement non-uniform time scale modification using the pitch-synchronous overlap-add method, as taught by Covell, for the purpose of achieving the time scale modification in a manner that preserves pitch contour, and thereby obtaining more natural sounding speech during signal reconstruction.

Regarding claim 28, Shlomot and Covell teach everything as claimed in claim 26. Additionally, Shlomot teaches determining step comprises determining near the end of production of the first signal frame if the second received frame is currently unavailable for production, Figure 4, col. 3, line 45 to col. 4, line 41.

Regarding claims 29, 30, and 32, Shlomot and Covell teach everything as claimed in claim 26. Additionally, Shlomot teaches determining after beginning the second producing step that the second received frame is still unavailable for production, at Figure 4, col. 3, line 45 to col. 4, line 41.

Shlomot does not specifically teach producing a second expanded portion, wherein the expanded portion and the second expanded portion are contiguous parts of the sound signal.

Covell teaches a system for non-uniform time scale modification of recorded audio, which implements time scale modification for compressing or expansion of audio (Col. 3, lines 45-47); time scale modification of individual sections or frames of speech and processing of contiguous frames of speech of non-uniform time scales (col. 4, lines 55-67; col. 6, lines 27-50; col. 9, lines 29-57). Covell teaches more natural sounding speech can be obtained by applying non-uniform compression/expansion to the speech signal.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Shlomot to implement non-uniform time scale modification of the received audio signals to produce second or multiple expanded portions, as taught by Covell, for the purpose of obtaining more natural sounding speech during signal reconstruction if subsequent signal portions are unavailable.

Regarding claims 20, 34, 38, and 39, Shlomot and Covell teach everything as claimed in claim 26. Additionally, Shlomot teaches the signal frame corresponds to a plurality of received frames, at col. 3, line 66 to col. 4, line 1.

Regarding claims 41-44, claims 41-44 are similar in scope and content to claims 26-40, and are therefore rejected under similar rationale.

4. Claims 13-19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shlomot in view of Covell, as applied to claim 26 above, in further view of Kubin et al, "Time Scale Modification of Speech Based on a Non-linear Oscillator Model," IEEE, 1994, page 453-456.

5. Regarding claims 13-19 and 21, Shlomot and Covell teach everything as claimed in claim 26. Shlomot and Covell do not specifically implement an oscillator model when manipulating the lengths of the signal frames.

Kubin discloses a system for time-scale modification of speech based on a nonlinear oscillator model. Specifically, Kubin describes the oscillator model (page 453, col. 1, section 1.2), a state-transition codebook (page 453, col. 1, section 1.3) and application of the oscillator and codebook in time-scale modification (page 455, col.1, section 3). Kubin teaches that the system provides for high quality output at moderate computational cost.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to implement the time scale modification with oscillator model and state codebook techniques of Kubin in the timing recovery system of Shlomot, for the purpose of improving the speech quality of the transmitted speech at a moderate computational cost.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A. Armstrong whose telephone number is 703-308-6258. The examiner can normally be reached on Monday-Thursday 7:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (703) 305-9645. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

Angela A. Armstrong
Examiner
Art Unit 2654

AAA
August 11, 2003

Vijay B Chawan 8/11/03

VIJAY CHAWAN
PRIMARY EXAMINER